



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,163	01/20/2004	Toshihiko Akahori	010777A	6643
38834	7590	05/18/2004		
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036				
			EXAMINER OJINI, EZIAMARA ANTHONY	
			ART UNIT 3723	PAPER NUMBER

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,163

Applicant(s)

AKAHORI ET AL.

Examiner

Anthony Ojini

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,4,6,8 and 9 is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/13/4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Liquid additive for CMP abrasive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (6,221,118 B1).

With respect to claims 1,2,5,7, Yoshida et al. disclose a liquid cerium oxide additive comprising a dispersant; and water, wherein the dispersant is of a polymer containing an ammonium polyacrylate that has a weight average molecular of 5000- 20,000, and wherein the liquid additive contains 0.1-10% by weight of dispersant (see col. 2, line 4 thru col. 5, line16); and pH-adjustment of up to 8 (see col. 1 line 17 & col. 11, line 57).

Yoshida et al. disclose fail to disclose polyammonium-acrylate that has a weight average of 1000 to 100,000; and a viscosity of 1.20 to 2.50 mPa.s.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide product of **Yoshida et al.** with a cerium oxide slurry

Art Unit: 3723

containing cerium oxide particles having polyammonium-acrylate **so as to provide a fine grain abrasive material achieving fine surface roughness**, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

It would have further been obvious to one having ordinary skill in the art at the time the invention was made to provide product of **Yoshida et al.** with an ammonium polyacrylate that has a weight average molecular of 1.005 to 1.300 or 1000-100,000, and a viscosity of 1.20 to 2.50 mPa.s **so as to ensure fine surface roughness**, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

Claims 3,4,6,8,9 is allowed over prior art.

The following is a statement of reasons for the indication of allowable subject matter: the specific limitations of "wherein the polymer dispersant is a polymer containing ammonium acrylate as a copolymerized ingredient, a polyammonium-acrylate, or a polyamine-acrylate" **in the combination as claimed in claims 3,8** and "wherein the dispersant is one of a polyammonium-acrylate, or a polyamine-acrylate and contain 10 mol % or less of free ammonia, which does not form a salt" **in the combination as claimed in claim 6. For example**, Yoshida et al. (6,221,118 B) disclose a liquid additive comprising a cerium oxide slurry containing cerium oxide

Art Unit: 3723

particles; an additive dispersant; and water. **However**, the art of record considered as a whole, alone or in combination, fails to provide or suggest "wherein the polymer dispersant is a polymer containing ammonium acrylate as a copolymerized ingredient, a polyammonium-acrylate, or a polyamine-acrylate; and contain 10 mol % or less of free ammonia, which does not form a salt".

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kido et al., Grover et al., disclose cerium oxide abrasive respectively. Merchant et al. disclose colloidal suspension.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7 to 4 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Joseph J. Hall, III".

Joseph J. Hall, III
Supervisory Patent Examiner
Technology Center 3700

AO
May 13, 2004